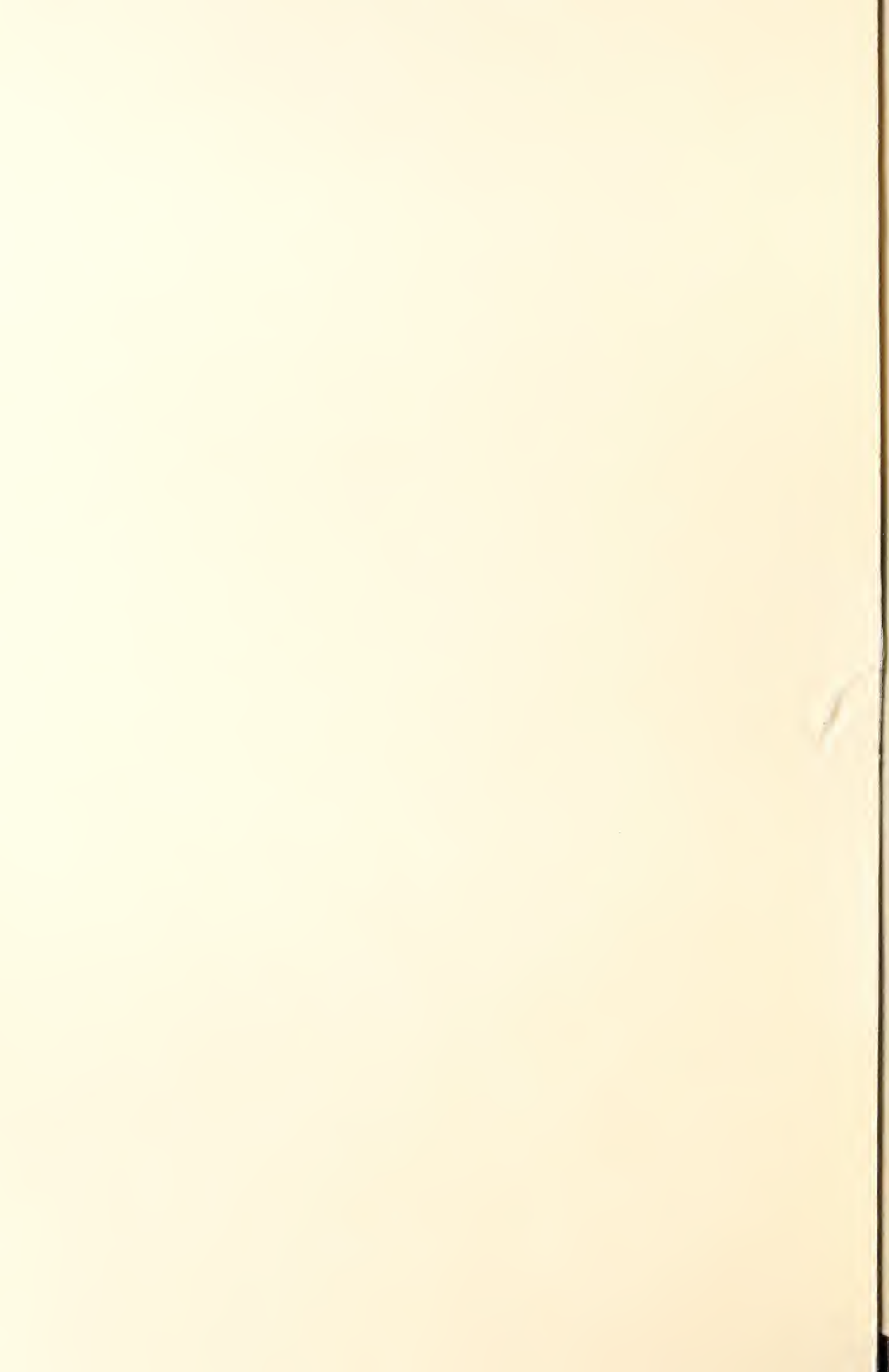


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62, 83

fall 1926

catalog  
**GROWING PECANS**

In Their

Native Home



The Evans-Gray Specialty Nursery  
Arlington, Texas

## FOREWORD

To those interested in pecan culture, particularly those in the great native pecan belt, the following pages ought to be of interest and also of profit. More than twenty years of study devoted to the subject in the west have enabled us to present them for your consideration.

We feel justified in the opinion that our long experience, observation, study and extensive experimental work have made it possible for us to render a service to the public in connection with the industry; and with this end in view we will gladly answer all questions directed to us concerning the subject, so far as we can, whether they come from a customer or not.



FIG. 1.—This young Cline tree set 195 nuts this year. 35 to the pound

## YOU ARE INVITED TO VISIT US

If you are thinking of setting out a pecan orchard it will pay you to visit our nursery, three miles from Arlington on the Mansfield pike. We can tell you a great deal more in a short time here with the trees before you than we could write you in many letters. Here, you can also select your varieties with bearing trees of the same kind before you.

Arlington is on a main artery of travel, and any time you may happen to be passing through, 'phone us from either Fort Worth or Dallas, and we will send a car to Arlington to meet you.

## OUR WARRANT

We warrant all our trees to be of mature hard wood, not spongy from over stimulation; to have thick tough bark for some distance above ground, so as to better resist sun-scald; to be dug with tap root whole in most cases, and where not whole, to be cut not less than four to five feet below the surface of the ground, where the root is small; to leave the nursery well packed, not having the roots dry after digging; to be true to variety ordered.

In connection with the last item, we are very careful not to get our varieties mixed. Then, too, the varieties differ each from other to such an extent as to make them easily distinguishable.

Mistakes are, therefore, not likely to occur. Should one happen, however, the customer may keep the tree sent by mistake, and we will send him another tree of the variety ordered; but we will not be further liable.

## SUBSTITUTION

We reserve no right to make substitutions when we are out of the varieties ordered. We are glad at any time to advise our customers in the selection of varieties, but their final choice is entirely their own business.

In case of any order for varieties that we are out of, we will write to the customer to that effect and, perhaps, suggest a variety that will do as well or better, but as before stated, it will be optional with him whether he accept such suggestion or not.

Under this arrangement the customer can save time by naming his second choice in the initial order, which he is requested to do.

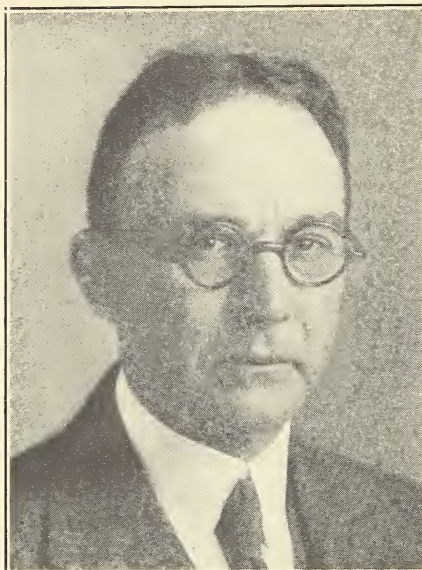
## OUR TERMS

Cash with orders for immediate shipment.

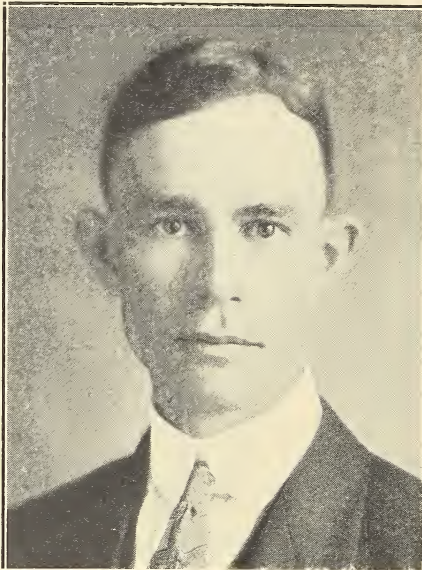
It is not only expensive to grow pecan trees, it is also very expensive to dig them with long tap-roots, as we do.

Customers who want trees selected, dug, and held for shipment on some future date, should remit twenty-five per cent of the amount of the order at the time reservation is made.





J. A. EVANS



O. S. GRAY

### OUR QUALIFICATIONS

No one is qualified to serve the public in pecan culture who has not had long experience and extensive travel in connection with the work.

There is quite a number of varieties of improved pecans, each one of which differs from all the others in its adaptation to soil and climatic conditions; and there is no other so good a way to become well grounded in the knowledge of these differences as through long continued observations over extended areas. Experience is also necessary to a thorough knowledge of the bearing habits of the several varieties as well as to other particular points of excellence of one variety over another.

Now, our Mr. Evans has devoted over twenty years to a study of the pecan and its culture. He is equipped by nature and education to conduct investigative work, and has carried out a great many experiments. He has traveled tens of thousands of miles wherever a pecan tree grew, but principally in the great pecan belt of Texas. He has critically studied specimens from thousands of the best trees, and from the number has assembled a list of varieties that is destined to play an important part in the development of the industry.

His advice will be of great value to any one starting into pecan growing.

He says there are two prerequisites to successful pecan growing, namely, good pecan soil and varieties adapted to the locality.

Our Mr. Gray is a graduate of the A. & M. College of Texas, 1917. He became interested in pecan culture while still a student in college, and since his graduation has devoted most of his time to the subject.

He has had not only considerable cultural experience, but also, in the capacity of Secretary of the Texas Pecan Growers Association, has had unexcelled opportunity to acquire a great fund of information.

Perhaps no other man of his age is better posted on the various phases of the subject.

With such men to direct affairs; with a corps of helpers, some of whom have been trained up with us from the beginning; with our long list of western varieties; and with our favorable location with reference to soil and climate, and also shipping facilities, the management thinks the Evans-Gray Specialty Nursery is equipped to render to the public every possible service in its line.

## OUR LOCATION

A line drawn along the general course of the eastern coast of Mexico and extending through Texas passes through Arlington.

The prevailing winds here are from the south, and it used to be said that all territory east of this line was agricultural and all west of it grazing, because it was thought that the south winds from over the waters of the Gulf would bring rain, while those that came across the land of Mexico would be dry. This reasoning was, of course, too rigid to adapt itself to the varying factors that modify climate. Much of the most valuable agricultural area in Texas lies west of this line.

Still, that this reasoning embraces some elements of truth is shown by the fact that each succeeding county west of this line has a lesser average annual rainfall than the one immediately east of it.

The natural home of the pecan, where there are tens of millions of trees growing in the wild, lies along this line, principally on its western side.

The great diversity of soils and subsoils in this locality enables one to find here almost any character of land that could be found elsewhere on the continent.

Our nursery is located on the timber side of the border line between the great prairie and the eastern cross timbers. Our stock is grown in sandy flats underlain by a sweet red clay subsoil where the water table is from six to nine feet down.

A fine combination, we think you will agree, for the great purpose we have undertaken.

Under the head of varieties, you will find a brief description of the differences between the eastern and western kind of pecans, and it was not by chance that our nursery is located on the line where either kind can be grown successfully.

We are in immediate connection with more than a thousand miles of paved highway, and a radius of thirty miles would, taking our nursery as a center, describe a circle containing 700,000 inhabitants.

Arlington is situated midway between Fort Worth and Dallas, not very far from either. It has not only train connections with both cities but also hourly interurban service and numerous freight lines which, together with our own truck service, places us in connection with twenty lines of railway radiating in every direction. Perhaps there is not another place, taking all things into consideration, so well adapted to the purpose of our work as is the one we have chosen.

## THE PECAN INDUSTRY AND ITS FUTURE

The pecan is a species of nut bearing tree native to America, and is beyond doubt the most important nut-bearing tree in the world.

We think it probable that its place of origin was on the upper reaches of some of the rivers of Texas, from whence it spread west and south into Mexico and even to some extent some of the Central American countries; and east into Louisiana and Mississippi and even a few trees into western Alabama; and northwest (perhaps by Indians) as far as Kentucky and even southern Illinois. Just what the factors were that limited its further eastern spread, no one could say. It may have been virulent attacks of fungous diseases which are favored by damp and humid climate, or it may have been the recent origin of the species (speaking in terms of the duration of species), sufficient time not having elapsed to continue the spread through the elimination of the unfit and the selection of the fit by the laws of natural selection; but, whatever the limiting factors were, the above outline embraces the native home of the pecan tree.

No disparagement of the industry is intended either in Georgia or any other state, for truth and candor compel recognition of the progress they have made, but on the other hand equal truth and candor will force the acknowledgement that the dry climate of the native pecan belt is very

much less subject to fungous diseases with which they are so much troubled.

There is no variety of pecan that cannot be grown in the western pecan belt with comparative freedom from fungous attack. There are few varieties that can be so grown in the Gulf Coast belt.

There are millions of pecan trees growing here, each different from all the others, each one a variety within itself, and all growing free from attacks of scab, for instance. How many of them would continue to grow that way further east, along the coastal belt?

The most favorable location for pecan culture is, we think, along and proximate to the line of thirty-inch annual rainfall, beginning some distance from the Gulf and extending through Texas into Oklahoma.

The word "industry" will be noted in the heading. Pecan culture is no longer a fad; it is an industry.

An acre of pecan trees in good bearing, will produce more pounds of nuts than the same acre in cotton would produce pounds of seed cotton.

The pecans would bring 50c per pound—the cotton would bring—what?

It is estimated that an acre of good land cannot be depended upon even under good management to produce more than 150 pounds of dressed beef per year. The same acre in bearing pecan trees would produce from 1000 to 2000 pounds of pecans per annum, equivalent to 4000 to 8000 pounds of beef, live weight.

We made a trip recently through the Gulf Coast States for the purpose of inspecting pecan orchards. We saw many good ones, but for the sake of brevity will mention only three, selected by location, so as to represent the entire growing territory.

The first one was in Georgia, sixty miles north of Albany. The trees grow in rather poor sandy upland, not more than six inches to clay anywhere, and yet the branches on many of the trees were literally breaking from the weight of nuts on them. The orchard will bring a gross revenue of \$300.00 per acre this year, and it would take \$1200.00 per acre to buy the land. Adjoining farm lands of like character, but without pecan trees on them, can be had for some \$30.00 to \$40.00 per acre.

The trees grew the difference.

The second orchard was one of 400 acres at Shreveport, La.

The owner authorizes us to quote him as saying that he has recently refused \$600.00 per acre for his entire orchard. His land, without trees, might bring \$150.00 per acre because of its location near town.

He will harvest at least 100,000 pounds of fine nuts this season.

The third and last orchard is one of 50 acres in the native pecan belt of Texas, for which the owner refused \$750.00 per acre.

We would give you the exact location of the orchard but for the owner's request not to do so. He fears the report might cause a considerable raise in the assessed value of his property on the tax rolls. His land, without the trees, might bring \$100.00 per acre.

Cases might be multiplied. We give you these as a fair indication of what growing of good pecan trees will do.

As the industry develops in the future, we expect it to take the line of marketing the finished product through big packing plants. Packages of pecan food products will be on the shelves of all grocery stores. When that time arrives, mere size of nuts will be of little value. High percentage of meat, richness of kernel, ease of cracking and separation will be the points of value.

We are often asked if there is no danger of overproduction of pecans attended by consequent reduction of prices. We answer, no and yes.

There is no use pretending to believe that pecans will bring \$1.00 per pound after they become staple articles of food—and that is what they are destined to become—that is what the wise grower wants them to become—and, once they become that, a crop equal to the present production will supply each inhabitant of the United States with one spoonful.

There is, therefore, no possibility of overproduction, though there may be some decline in the very high price of the improved varieties.

However, it is not necessary to get \$1.00 per pound in order to make money out of them. The growing of them will be very profitable at less than half that price.



## CLIMATE, SOIL AND SUBSOIL

We are often asked whether or not to set certain kinds of land to pecan trees.

In order to answer this question, and also as to what varieties to use, it is necessary to know the location—or rather the climate as affected by the location. Both temperature and moisture have an important bearing on the problem. Some lands that might be profitably used in Louisiana or East Texas could not be profitably used here, and would be still less suited further west.

Beginning in the east and going to the west, the change in the adaptability of soils conforms to the necessary requirements for securing a sufficient supply of moisture.

The ideal condition for pecan trees is to have their roots in constant but moderate soil moisture and their tops in dry air and maximum sunlight.

The eastern division has plenty of moisture, even on the hills where the soil is thin; but it cannot have dry air and maximum sunlight, and the trees suffer from fungous diseases.

The western has the dry air and plenty of sunshine and is practically free from fungous diseases, but cannot have a sufficient and dependable supply of moisture except by careful selection of soil.

The problem, therefore, is one of much greater importance in the great pecan belt of Texas and Oklahoma and places further west than it is in Eastern Texas and Louisiana and places further east.

The great natural pecan belt of Texas affords the most ideal conditions for pecan culture to be found, but the percentage of land there that is highly adapted to the purpose is much below what the general public conceives.

In the eastern section almost any fairly fertile land of loose texture that is underlain by a porous clay subsoil will do for the purpose provided the water table is not too near the surface. The channels of the streams there are fairly shallow and do not drain the valleys to any considerable depth, and much land that would otherwise be the best is too wet for the purpose. In the western section the soil is very fertile and the atmospheric conditions are favorable, and the consideration there is one of moisture.

The best combination for securing and maintaining this moisture is a surface soil of loose texture underlain by a porous clay subsoil. The necessary depth of the surface soil varies with the rainfall and in no case should there be less than twelve to eighteen inches; more would be better. A surface soil of loose texture, preferably one containing some sand, is important because it readily takes in the rainfall and also because it allows an easy development of an extended lateral root system.

The clay subsoil is important because it will catch and hold the water taken in through the loose soil above, and also because it will bring moisture up by capillary attraction.

In sand water will rise some eighteen inches by capillary attraction. In silts it will rise from 7 to 9 feet. In the finest clays it will rise from 16 to 20 feet.

Many of the valley soils of the West are fine for pecans, being composed of eroded rock (sand), light clays and decomposed vegetable matter; and the very best of them are the ones that contain the most sand and have either clay subsoil or free water within reach of the roots—though the roots must not be in water but above it.

We do not consider heavy black waxy land, either valley or prairie, that cracks badly, as first-class pecan land.

The opinion has been prevalent that pecans can be grown successfully in this section only in bottom land. Probably the opinion is based on the fact that the trees in the wild are largely confined to such locations. Space will not afford an explanation of this phenomena but the opinion is an error. Many sandy uplands, particularly flats where the soil is deep enough and clay underlies, are admirably adapted to the purpose. Trees set in such locations may not grow quite as rapidly as others in bottoms, but they will begin bearing at a younger age.

There is a growing tendency toward the use of such land for pecan

orchards—not to the exclusion of bottom land, but by way of extending the field.

The texture of a hard natured top soil is hard to change to any extent, and the nature of the subsoil cannot be changed at all. For this reason, the texture of the top soil and the character of the subsoil are of first importance.

It is easy to add fertility to sandy soil by raising leguminous crops and plowing them in, and also by the addition of other fertilizers. Sandy soils respond readily to such treatment.

Even blow sand can be made to answer the purpose admirably by plowing under a few crops of peas, provided the right kind of clay underlies the sand—which is usually the case.

Sand readily absorbs rainfall, especially when well tilled, and by the use of terraces to prevent run off of heavy rains, sufficient moisture can be conserved to supply the needs of the pecan orchard.

It is our idea that great development of pecan orchards will take place in sandy land.



FIG. 5.—Halbert, Typical Western

FIG. 4.—Typical Eastern

### EASTERN AND WESTERN VARIETIES OF PECANS

There are such broad differences in the habits of growth and form of trees between the eastern and western varieties of pecans as to make it necessary to take these differences into account in arriving at a correct conception of the value of nursery stock of one kind or of the other. They are so different, in fact, that they can not be correctly judged by the same standard. The eastern kinds are of larger early growth than the western, and they have few branches putting out from the main stem. These branches are long and shanky like fishing poles, and, in turn, have few subdivisions. It is not uncommon for growth from a bud in the nursery row to attain a growth of six or seven feet during a season without a single branch from the side. The appearance of such a tree is attractive to the eye, and the tree is likely to be pleasing to the customer if judged by appearance only.

However, the habit of sparse branching is much against a variety, as the buds that produce the clusters of nuts come in the ends of the branches—and the more branches, the more terminal buds—the more terminal buds, the more clusters—the more clusters, the more nuts.

It is physically impossible, other factors being equal, for a sparsely branched tree to produce as big a crop as a many-branched tree.

The western trees, as a rule, are of a more slender growth than the eastern ones, and they divide this growth into many branches. The stems of the nursery trees may not be as straight because, being slender, they are hard to keep from bending while growing. They are also likely to have knot scars on them where the lateral branches were cut either during the growing season or at the time of shipment.

But the stem will straighten, the knot scars will heal over, and the western tree with its numerous pendulous branches will eventually become more beautiful than the eastern one. Faith in this type of tree, notwithstanding its appearance, will be abundantly justified.

We have actually had complaints from customers that the trees they got from us were rough—did not have nice smooth bark like some they had seen. (We pause for the moral that these are not the only instances where people have gotten something good for them and did not know it at the time.)

All pecan trees eventually have rough bark, and western trees have it much earlier than eastern.

Rough, corky bark is better protection to a tree in many ways than smooth, thin bark; so do not become dissatisfied if your trees from any western nursery come to you with thick bark of this kind.

Under the head of "Our Methods of Production," we quote the pecan expert of the U. S. Department of Agriculture, Farmers' Bulletin No. 1501, pages six to eight, showing why corky bark is better than smooth.

## OUR METHODS OF PROPAGATION

Improved pecan trees are propagated asexually by means of scions (buds or sections of small limbs with buds on them) taken from a tree of a desired kind and placed on another tree (called the stock) where they are made to unite and grow.

The result is accomplished by the employment of some one or more of the various systems of budding and grafting.

The pecan is perhaps the most difficult of all trees to propagate in this way, even more difficult than other members of its family, and the slender western varieties are the very most difficult of all.



FIG. 6.—“Bark below and above a pecan union eight years after grafting, showing contrast. When pecan trees have been propagated near the ground the smooth bark is brought low, subjecting the tree to the danger of a form of trunk injury which seldom affects parts with rough scales.”—U. S. Department of Agriculture.

variety, the bark of a tree above the point of union is likely to be smooth and largely without the natural protecting corky layer of the seedling stock below. Trunks on rapidly growing trees which have been propagated at the ground line or below and on which therefore, this smooth bark extends almost to the ground are very subject to winter injury. This condition is particularly true on the southwest side of trees growing in the richer spots of sandy soil, and invariably occurs immediately above the ground. As this seldom happens with trees that have been worked a foot or more above ground, and as budded trees are usually worked at this height whereas grafted trees are nearly always worked below the surface, the advantage in favor of the former method is apparent.

“The superiority of budded pecan trees in this respect is regarded by many experienced planters as being so important that they refuse to buy grafted trees. Budded pecan trees

In case of a mature tree, there is no difference in the value whether budded or grafted. Budded trees, however, possess certain advantages over grafted ones in point of getting them to live after transplanting. A big percentage of the trees set out in Texas have died from sun scald, a trouble caused by the extreme heat of the sun in mid-afternoon when its direct rays and the reflected ones from the ground converge upon the little tree upon its southwest side, burning it and killing the cambium cells, just as a small fire might do.

Now, grafting of nursery trees is done below the surface of the ground, and the growth from the graft has smooth, tender bark that, however pleasing it may be to the eye, is nevertheless much more subject to this injury than a thick bark would be—in fact, this injury does not occur where the bark is thick and corky.

Budding is done above ground at any desired height, leaving the thick bark of the stock to protect the tree against this injury, and also against any physical violence that might happen to it, such as gnawing by rabbits.

The following quotation is from Farmers' Bulletin No. 1504, pages 6-8, U. S. Department of Agriculture:

“During the early life of pecan orchard trees, and under certain climatic conditions, there are often distinct advantages in favor of budded stock, particularly with reference to winter injury to trunks, which has been very noticeable with the pecan in the east, both south and north. For a period of four to eight years, depending somewhat upon the



are distinctly preferable . . . and should be obtained for planting except under special conditions. . ."

We propagate most of our trees by the **Skin Bud** method (suggested by skin grafting on the human body), invented, developed and introduced by our Mr. Evans.

It is said that necessity is the mother of invention, which is certainly true in this case. The western varieties with their delicate buds were found to be so difficult to propagate as to require something more successful than any of the methods theretofore employed in order to meet the enormously increasing demand for western trees.

Only a few of our trees are grafted (not one per cent) and all of them are done by our improved method of bark grafting, high enough above the ground to obviate all objections that arise from thin new bark near the surface of the soil.

### "EASY TO LIVE AND EARLY TO BEAR"

This is our motto, and it is true—our trees are easy to live, to some extent because of the way they are grown, but more especially because of the way they are dug—with the whole tap root. They bear early because, to some extent, of the attention they have received, but more especially because of the inherent bearing qualities of the varieties, for which qualities we cannot claim credit, as we had nothing to do with that.

We have grown both eastern and western kinds side by side for a number of years, and it is always some western variety that bears earliest and produces the heaviest crops early. Any opinion contrary to this must grow out of lack of experience with western kinds.

We have secured some rather remarkable results in early bearing with western varieties, which results, we tell you frankly, are of value in only the following ways:

First: They help advertise our business.

Second: They help correct the erroneous impression that it requires a wait of many years before pecan trees begin to bear.

Third: They help one in western territory to arrive at a decision to use only western kinds.

Fourth: They are, in some cases, of value as a varietal sign, in that early bearing is considered to be something of an indication as to the quality of the variety in respect to production.



FIG. 7.—In nursery row, 5 nuts the first year

For other purposes, the results are valueless; for another tree of the same variety, even though it did not bear so early and may have been grown by another nurseryman, would, other things being equal, produce as heavy a crop eight or ten years after setting as the early bearing one would

produce. In other words, a few nuts on a little tree does not prove that this particular little tree will bear more nuts ten years hence than any other little tree of the same variety.

Here are some of the results we have secured:

Figure 8 shows a little tree in the nursery row. It was budded last year, but did not get large enough to be dug and sold, and was carried over. This year it matured 25 large nuts.

Last year we had a similar tree that lacked two or three inches of being waist high to a man of average height. This tree matured 27 nuts that weighed one-half pound.

Two seasons past we had a tree only 9 1-2 inches from the topmost leaf to the ground, which tree matured a cluster of full sized nuts. A man could place his thumb on the ground and span the nuts with his middle finger. The age of this tree from the planting of the nut from which it grew to the gathering of the nuts from it was 19 months.

Two important newspapers took pictures of this tree, and a great many credible people will testify to this statement. We carefully crossed these nuts with another variety at the proper time, and later planted them in our experimental plot where we now have little trees growing from them.

We have thousands of little budded trees now, October, that were in the shell last March, seven months ago, and we invite you to come next season and let us show you nuts on some of them.

The following results are important in every way as showing annual yields:

Figure 9 shows a four year old tree that matured four pounds of nuts that year. The crop increased during consecutive following years to 12 pounds, 18 pounds and 30 pounds.

This tree has had no special attention, its cultivation being mostly incident to other crops. It has had one light application of fertilizer.

Figure 11, on a following page, shows a Halbert tree (picture just taken) five years' growth from the bud, standing in our orchard. It is in poor sandy loam soil with clay subsoil. Its cultivation has also been incident to crops grown between the trees. It had its first application of fertilizer this year, a light one. We have just gathered from it, dried and weighed up, 11 3-4 pounds of nuts, and there are a few more on the tree not ripe yet.

Are these among our best records? Yes, but we have many more trees that are doing wonderfully well. A visitor said the other day: "I'm amazed

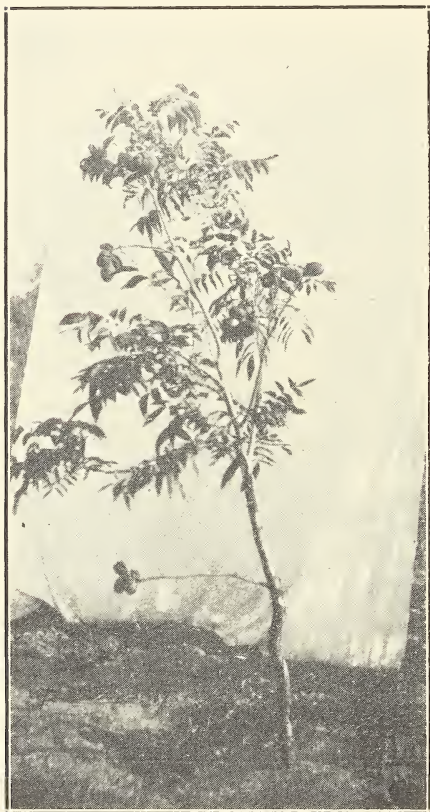


FIG. 8—4 1-2 ft. tree in nursery row, 25 nuts year after budding



FIG. 9.—Four year Harbin tree that bore four pounds.

at what I see here, but I go to the dog show and see the dogs act, but when I go home my dog won't do that way. How about that?" Yes, your orchard will do as well as ours and better if you will give it the proper attention, for ours has not received the attention it should have had.

We repeat that three things are necessary: Pecan soil; right varieties; and cultivation.

Your orchard will not do as well as ours if you set the trees in Johnson grass meadow and then manifest your next interest by going back next season to see if they are alive—and we might add, it will do the trees no good to accuse the nurseryman of having sent you a bad lot.

Our trees have not, so far, proved a good means of destroying Johnson grass.

To those who think they will have to wait too long to justify them in setting out trees:

No one waits so long as he who does not start.

You will have to wait whether you set trees or not.

## VARIETIES OF PECANS

In the principal address of the occasion, delivered at the National Pecan Growers Association at Albany, Ga., by Dr. Hedrick of the Geneva, New York, Experiment Station, he said:

"The most important problem confronting the industry for the next fifty years is that of varieties, and the most important problem for the next fifty years following that will be varieties."

We call your attention to our very long list of western varieties.

We are located in the great natural pecan belt and we believe that the pecan will reach its highest state of development in that territory. We firmly believe that this will be done with varieties that originated here, and are, therefore, adapted to the environment. We have always believed this,





FIG. 10.—The two trees in the upper picture are in our young orchard. They bore 10-12 lbs. of nuts, each, this year. The nuts were picked by hand, without the use of a ladder.

The lower left tree is a Cline, which, though scarcely taller than the man, set 195 nuts this year.

The lower right tree is a Clark, left in the nursery row three years before the picture was taken.

These pictures were taken a month or more after the nuts had been harvested. Quite a good many hulls had fallen, and the pictures do not show the full crop.





FIG. 11.—Five years from the bud—11 3-4 lbs. nuts.

and with this aim in view, our Mr. Evans has spent more than twenty years in investigative and experimental work, having, during that time, examined and graded thousands of samples of nuts from the best native trees, out of which our present list has come.

He not only selected the best kinds he could find, but secured buds from them, brought the buds together and propagated them so as to be able to observe the different new varieties in respect to yield, susceptibility or resistance to diseases, and all other points of advantage or disadvantage, as the case might be. He also sent buds and grafts to different locations and had them grown there in order to obtain information of varied climatic effects upon each of the varieties, and thus be prepared to render valuable advice in the selection of varieties for any given location.

The Evans-Gray Specialty Nursery is not simply a nursery in the ordinary meaning of that term. It is more than that. It is a plant breeding place, an experimental place, and a nursery combined.

As a matter of fact, the nursery part of our work grew as a matter of necessity out of our breeding and experiments.

We lay emphasis upon the word **Specialty**. Most of the varieties of fine fruits and nuts that we grow were either originated by us through breeding or collected by us by selection from nature's breeding. They are our own.

## SCALE OF GRADING

In order to get a fair idea of the value of a variety of pecan it is necessary to compare it with other varieties; and such comparison implies a standard or scale of grading upon certain well defined points and qualities.

Following is the scale we use in estimating the value of a variety from the growers standpoint:

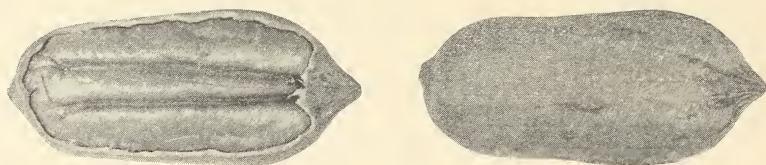
	Points
Bearing habit (regularity of crop, heaviness of yield)-----	50
Appearance (Shape, size, color)-----	15
Mechanical Qualities (Cracking, separation)-----	15
Turn-out of Kernel (Proportion of meat to whole weight)-----	15
Quality (Richness, flavor) -----	5
<b>TOTAL</b> -----	<b>100</b>

In the following descriptions (E) means eastern variety, and (W) means western variety.

Each cut is the actual size of an average nut of the variety it represents.

The nut photographed was not the largest of its kind, and in nearly every case it was grown on some young tree in our nursery grounds.

Those who set trees of these varieties in ideal locations may expect somewhat larger nuts than are here shown.

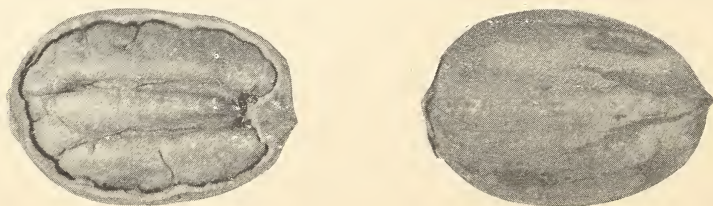


**SCHLEY (E).** The Schley is the "class" of the eastern varieties. It so far surpasses the others in quality as to command a higher price in the market, and is sold under a separate brand name, "Queen".

Nuts not of the largest size, but large enough, running about 50 nuts to the pound. Shape, long, conversely enlarged and flattened at base and apex. Shell, thin; kernel, full and solid; flavor, rich. Cracks and separates almost perfectly. Percentage of meat 62.

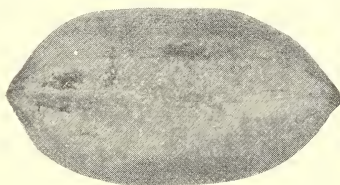
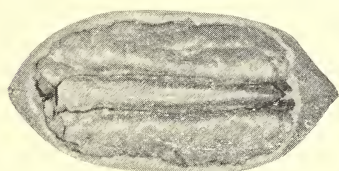
It is not as early a bearer as some others, but is said to overcome shy bearing later on. Subject to fungous attacks to some extent, especially in coastal belt.

The variety has the disadvantage of producing nuts of different sizes, and even somewhat different shapes, on the same tree in the same season.



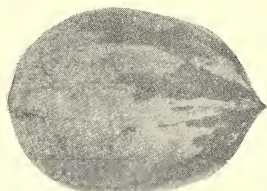
**SUCCESS (E).** A large nut, 40-45 to the pound. Enlarged toward base, and slightly drawn in toward apex. Shell, medium; kernel, full and solid (where the variety does well); cracks and separates well. Percentage of meat 52-54.

Nuts of this variety are large and handsome in appearance, and the variety is a profitable one to use in locations where it is adapted. However, its range of adaptability seems not to have been clearly defined yet. We have reports from some places that the nuts did not fill well, while from others, reports were most pleasing



**DELMAS (E).** A large nut, 42-47 to the pound, of balanced length and thickness, slightly tapering at both ends. Medium shell; cracking and separating good; 46-50 per cent meat.

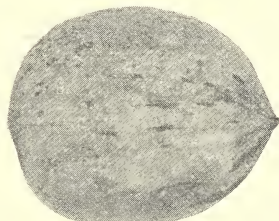
It is said by many that this nut would be more generally grown in the coastal belt than any other variety, but for its susceptibility to scab. However, we have seen it growing free from this disease even in Georgia in the hills away from the coastal belt. It is entirely free from scab in the native pecan belt. Trees of the variety are thrifty, but the nuts are very late in maturing.



**HALBERT (W).** This variety is most remarkable for its early and heavy bearing, there being only one other variety, our Harbin, that surpasses it in this respect. However, the variety is very susceptible to scab, and should not be used in bottom lands east of Dallas, nor very far south of there. However its east and south range may be somewhat extended in higher locations where the air drainage is good and there is no obstruction to the winds.

Nuts, as a rule, not large, but of fair size, averaging about 56 to the pound. However, they vary greatly, depending on the fertility of the soil in which the tree grows, the amount of moisture available, and the cultivation the tree receives. Always, though, the nuts are full of meat, no matter what the size. We have seen really large Halbert nuts grown under favorable conditions. Shell thin; kernel rich and plump, but cracking and separating not perfect. Meat content 58 to 60 per cent.

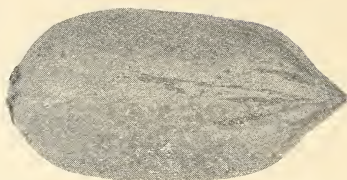
Trees of the variety do not grow as large and strong as some others, but we would not be willing to leave the Halbert out of any setting we were making for ourselves provided the location was favorable to it.



**BURKETT (W).** A large, round nut; about 45 to the pound; with thin shell and fairly full, plump kernel, though the meat is somewhat powder marked. Cracking and separating qualities high, and the meat content, 52 to 55 per cent, would be higher but for the considerable corky material around the kernel, which, however, separates easily from the meat. The tree is a strong grower, and is highly resistant to scab. We sent scions to Georgia many years ago, and had trees grown there. The nuts from these trees are not so large as those grown in Texas, and the variety is not well enough adapted to that territory to compete with the eastern ones. We also budded and grafted trees in the Red River valley at Shreveport eleven years ago. For some time the owner was greatly pleased with these trees, but they are now beginning to show an unhealthy condition. We are also informed that some growers have abandoned the variety in the valleys around San Antonio, though it does well on higher ground.

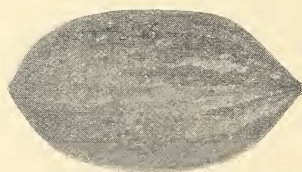
The Burkett is a rather consistent bearer, though not a heavy one. The variety originated in very high altitude (for pecans) and it is our opinion that it will prove valuable for the central and northern parts of the native pecan belt.





**SOVEREIGN (W) (Texas Prolific).** A medium long nut of good size, running about 52 to the pound; shell medium; cracking and separating qualities fair; kernel, plump and of superior flavor; percentage of meat 52 to 55. This is one of the early bearing varieties, but the pistillate blooms, even in the same cluster, do not reach the receptive stage at the same time, and for this or for some other reason, the clusters fail to set a considerable part of their nuts. However, the variety is generally classed as one of the good bearers, and is giving entire satisfaction in many places.

Trees of this variety are willowy in their growth, and do not grow as rapidly as some others.

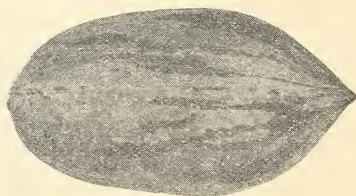


**CLARK (W).** Nuts not large but of fair size, running about 50 to 55 to the pound. Shell, thin; cracking and separating qualities good; kernel rich and plump, entirely filling the shell; proportion of meat 55 to 58 percent.

Trees of the variety are extremely willowy in their growth, but are thrifty and grow fairly rapidly; and the variety is one of the very best in point of bearing, though subject to fungous attacks in low altitudes and damp climates.

A peculiarity of this nut is that the kernels cannot be easily taken out in halves by the use of an end-pressure cracker because the shell is too full of meat; but nearly every nut can be made to turn out two perfect halves by using an ordinary double-handle table nut cracker.

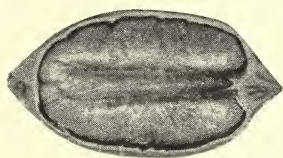
While the nut is not a large one, it is our opinion that it will play an important part in the development of the industry throughout the central and northern part of the pecan belt, because of its excellence and heavy bearing.



**CLINE (W).** Perhaps the largest good pecan and the best very large pecan grown; running 29 to 35 to the pound. A rather long nut, somewhat flattened and pointed at the apex. Shell medium; cracking and separating fair; kernel plump and full when grown under favorable conditions; proportion of meat 50 to 55 percent. Trees of the variety are perhaps the most pendulous or willowy of all, although rapid and strong growers. In point of early and heavy bearing, the variety is one of the best ever introduced.

We have had trees grown as far east as Shreveport, where they appear to be free from scab and are otherwise doing well. Still, the variety is new; and as we have seen nuts of it slightly affected in low, damp places elsewhere (though not as much as the Schley in the same field) we do not yet feel warranted in recommending its extensive use in eastern and southern territory. But to those in the central and northern part of the native pecan belt, who want a large showy nut, we do not hesitate to say that the Cline is the one to get.





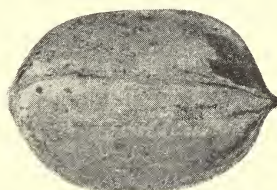
**NUGGET (W).** A nut below the average size, running about 70 to the pound, but of unsurpassed qualities in every other respect. Shell, very thin; cracking and separating perfect; kernel, plump and rich, and perfectly smooth; no dust, and very little packing around and between kernels; percentage of meat, 60 to 64.

Trees of the variety are remarkably healthy, though not of as rapid growth as some others. We have never seen one of them even slightly affected by rosette or die-back in any kind of location. However, our tests in different places show the variety quite susceptible to scab; and we recommend it for only the central, western and north-western parts of the native belt.

It is yet too early in our experiments for our full and final verdict on the bearing habit of the variety.

We know that it does not begin to bear as early as the Halbert and some others, but our four-year trees have borne two light crops, and are full of fruit spurs now; and, as the parent tree bears well, we have faith in the variety in this respect.

(We formerly called the Nugget by another name, temporarily.)



**BOGGUS (W)** An attractive nut about the size of the Stuart, averaging around 52 to the pound. Light colored shell, beautifully striped when newly gathered; shell, very thin; cracking and separation fine; kernel plump and full, though surrounded by rather too much corky packing; percentage of meat 52 to 55; bearing habit, consistent and good, though not as early as some others; trees moderate but healthy growers, free from rosette, and also from scab as far as our experiments have been conducted. Recommended for all parts of the native pecan belt, and for experiment elsewhere.

**WELTY (W).** A short, round-bodied nut, though not round at the ends, where it slopes quickly to point. Size medium, 55 to 60 to the pound. Color, brown with dark stripes; shell, medium to thin; cracking and separating fine; kernel plump and full; proportion of meat, 55 to 60 per cent.

Trees of this variety are strong and thrifty, and are, perhaps, the most beautiful of all. The branches grow symmetrically, and are always full and round, even to the tips; and the leaves have good shape and color.

We have not tested this variety for resistance to disease on an extensive scale, but we have never seen a tree of it affected by scab, even growing by the side of Schley trees that were affected. We know, therefore, that it is not very susceptible to fungous attacks, to say the least; and we do not hesitate to recommend it for the greater part of the native pecan belt, and even in a limited way for the eastern and southern parts.

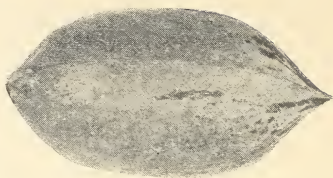
In point of bearing it is both early and prolific.

**SIMS (W).** A nut of good size, about 55 to the pound, of the exact type of the Success, being enlarged at the base and slightly drawn at the apex, though it is somewhat longer in proportion to thickness than is the Success.

Shell, medium to thin; cracking and separation absolutely perfect; kernel rich and plump and of fine appearance; percentage of meat 52 to 54. Trees are very slender of branch and twig, are of moderate growth though perfectly healthy, being free from rosette, and also of scab so far as our experiments have extended.

In point of bearing, the trees do not begin as early as some other western kinds, but they later show every indication of being good producers.

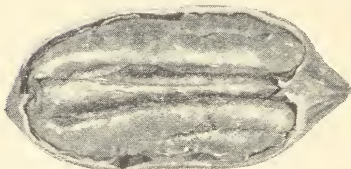
We look for this nut to prove of special value in the future, when the cracking and packing plants begin to put up packages of finished products instead of selling in the shell. We repeat that no nut can surpass this one in cracking and separation.



**MILLICAN (W).** A perfectly round bodied oval nut of good size, averaging about 5½ to the pound, gently sloping to a point at each end.

We have said of this nut that it has the thinnest shell that ever enclosed a kernel; cracking perfect; separation a little off, because the sutures in the kernels are deep and narrow, and it is necessary to push out some of the corky material with a tooth pick; kernels full and plump; percentage of meat 55 to 58.

Trees of the variety are rapid growers, though their branches are not so numerous and slender as is the case with some other western trees. They are perfectly immune to scab in this territory; and while they do not begin to bear very young, we have tested them long enough to say that they are regular and consistent bearers.



**WESTERN SCHLEY (W).** A nut resembling the Schley so much in size and shape as to be easily mistaken for it. However, the color of the western nut is a little darker than the eastern one. Shell, very thin; cracking and separation good; kernel, full and plump; percentage of meat, about 60.

The trees are fairly rapid growers, are thrifty and green, and are little susceptible to scab, if susceptible at all.

We have particularly favorable reports from it in San Antonio territory, where it does admirably in low bottom lands where the Halbert and even the Burkett have not been profitable.

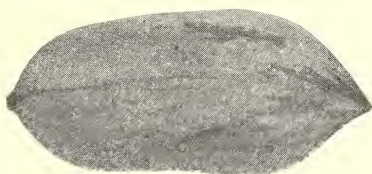
In point of bearing it deserves rank among the best. It not only begins to bear early, but continues to bear consistently and heavily. Recommended for setting throughout the entire native belt and for experiments further east.



**IRION (W).** In shape, a nut of the exact type of the Sovereign (Texas Prolific) and of about the same size, ranging about 57 to 60 per pound. Few varieties ever grown equal this one in quality. Shell, very thin; cracking and separation, fine; kernel, full, plump, rich and smooth; percentage of meat 58 to 61.

The tree is a strong, healthy vigorous grower, entirely free from scab in this locality, though we have not yet tested it out in the eastern belt.

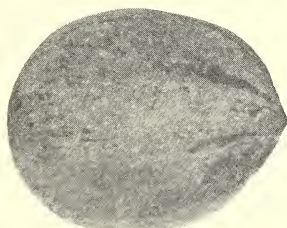
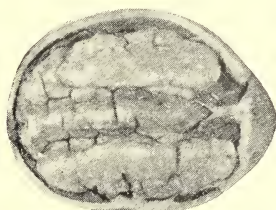
In point of bearing it does not begin early, but increases rapidly after it once starts.



**BAILEY (W).** A very large, rather long nut, 40 to 45 to the pound, of the type of the Schley, though much larger and much inferior to that nut. Shell, medium to thick; cracking and separation not good; kernel, plump, the shell being well filled in good locations; percentage of meat 48 to 50. Trees of the variety are very vigorous and healthy, and are perfectly free from scab in locations where Halbert and Clark are ruined by it.

We decided to catalog the variety because some who have it under test for us are pleased with the freedom of the trees from diseases, and by the appearance of the nuts.

In point of bearing the variety does not begin early, but bears well after starting.



**HARBIN (W).** (Carried on our records as the E-5.) A large, round nut of the Burkett type, though not quite so much shouldered at the apex as is the Burkett. Averaging 35 to 40 nuts to the pound where the Burkett averages 40 to 45. Doubtless the parent of the Burkett tree is also the parent of this one, as both trees grew in the same valley below where the old original tree of the Burkett type stood. We have carried our test tree of this variety on our records as the E-5, which means that we have had under test five varieties of that type, all from the same little valley, all thought to be descended from the same tree; and that this particular tree stands fifth in cross section E.

Shell, thick in comparison with the class; nuts we have been describing; cracking and separation poor by the same standard; kernel, always plump and full, though wrinkled and surrounded by too much corky material for a class; percentage of meat 43 to 45.

The trees are remarkable for their health and greenness; and in point of bearing, the variety outranks all others, even the Halbert, by far.

We had not intended to grow the variety, priding ourselves too much upon class, perhaps; but not a season passes without at least a dozen orders, each including every tree of the variety in the nursery—and always after we have informed the prospective purchaser of the qualities of the nut, just as above.

The nuts are large and attractive in appearance; and if they should sell for only 25c per pound, there would be more money in growing them than in almost any other kind.



**EVANS (W).** A nut of the Halbert type, though a little larger, and slightly more shouldered at the apex. Averages 45 to 50 per pound. Smooth, fine-textured, light-brown colored shell, very thin; cracking and separation, almost perfect; kernel, full, plump and rich beyond comparison; percentage of meat 56 to 60; no dust and little corky material.

The kernels of the nuts come out in halves, are as yellow as new gold, and are the most attractive of all pecan meats. Trees of the variety are the rankest growers we have seen, and we think this is one reason why they are late in beginning to bear. Our five-year trees have their first scant crop on them this year, though they are for the first time full of fruit buds, giving some hope of better things next season.

If we only knew the variety to be a good producer, we would urge everybody to buy it. It originated in the lower reaches of the Colorado River, where susceptible varieties cannot grow because of scab; and we think, for this reason, that it will thrive anywhere in the native belt, and even, perhaps, in the east.

Once its bearing is established, the only drawback to the variety would be a rather late ripening date. As it is, we recommend its purchase in only trial quantities.





**GOLDEN (W).** A nut of the size and type of the Schley, though more perfect in shape, richer in color and higher in percentage of meat.

The color of the shell is a rich yellow, marked by a few red-brown stripes; and the distinctive points at the ends of the symmetrical shell look like the design of an artist. It is the highest class nut it has ever been our privilege to grade. Size, medium, about 58 to 60 to the pound; shell extremely fine textured and very thin; cracking and separation, perfect; kernel, full, plump, smooth and very rich; percentage of meat 60 to 64.

Trees of the variety are luxuriant growers, and all the smooth bark of the younger wood is yellow in color. The variety is resistant to scab so far as we have tested it, even beside affected Schleys.

In regard to bearing, it is a little too early for us to say positively. We have one tree bearing in the nursery row, one permanent tree bearing the third year from the bud, and all our four and five-year trees beginning.

We have faith that the variety will bear well; and if it does, the Golden will be the most extensively grown pecan in the world.

## HOW PECAN TREES SHOULD BE DUG

We have always contended that it was injurious to a pecan tree to cut the tap-root in digging.

Many offer the following argument in favor of cutting the tap-root: "When the tap-root of a pecan tree has been cut before setting, it puts out from three to five tap-roots instead of one; and from three-to-five is better than one."

We answer that we would be pleased to swap them three-to-five nickels for a dollar.

In bulletin No. 84, *The Pecan in Texas*, edited by Mr. J. H. Burkett, and published by the Texas Department of Agriculture, Mr. Burkett makes some comparisons between tap-rooted pecan trees and others.

After remarking upon the importance of the problem, and stating that he had set out a number of Texas grown lateral-rooted trees, Florida grown semi-lateral-rooted trees, and west Texas grown tap-rooted-trees, he goes on to say:

"The first year the lateral-rooted trees made the best growth and the tap-rooted trees very little. The second year the tap-rooted trees did as well as the lateral-rooted trees. The third year the tap-rooted trees outgrew the lateral-rooted trees very decidedly. The behavior of the semi-lateral-rooted trees was intermediate between the extreme lateral-rooted and the tap-rooted trees.

"In the winter of 1924-25, three years after the trees had been planted, two average specimens each of the three types of trees were photographed as they stood and then dug and the root system photographed and notes taken on their development since the trees were planted." (Mr. Burkett here illustrates these trees by photographs.) He continues, "It will be noted that the tap-rooted trees have developed a moderate number of new roots, which are large and reach far, while the lateral-rooted trees retain their former dense clump of small roots, none of which reach far and all of which compete with each other. This difference seems to account for the superior growth of the tap-rooted trees the third year."

Three-fourths of our trees are dug with the tap root entire, and all of them are dug with the tap-root practically whole. It is much less expensive to cut them instead of digging them out, but we spare no expense in our efforts to make the industry a success.

If the objection be raised that it would be very expensive to set out our trees with their long tap roots, we answer that they ought to be set out





FIG. 13

FIG. 12

that way whether it is more expensive or not. It is little short of a sacrilege to injure a tree that is being set to last a hundred years or more. But as a matter of fact it does not cost more to set out a tap-rooted tree with short lateral roots than it does to set out a short tap-rooted tree with long lateral roots. It really costs less, as the former can be set in a small, deep hole dug with a post hole auger, whereas the latter would have to be set in a large and expensive hole dug with pick and shovel.

A tap-root can be dug whole; lateral roots must be cut; and with their cutting goes the loss of all hair roots from the extreme tender tips of which all water and nutrients from the soil are taken in. It is plain, therefore, that a transplanted tree cannot take in soil moisture until it has grown new hair roots from the cut ends of the lateral roots; and these new hair roots will put out just as quickly from the end of a short-cut lateral root as they would from a long-cut one.

There appears to be no advantage in long-cut lateral roots, while there are some disadvantages. First, long roots require a big hole to set the tree in, while short roots can be set in a small, round, though deep hole. Second, we have come to the conclusion that it is actually better to set out trees in these small, deep holes.

The custom of setting trees in large holes and filling in around them

with only good top soil causes a break in capillary attraction between the subsoil of one character and the filled-in soil of another character. We have examined whole settings where the filled-in soil around the trees was perfectly dry while the surrounding subsoil was moderately moist. There had been no running together of the two soils so as to form a good union. In many cases, on the other hand, there were actually cracks between the filled in soil and that surrounding it, thus completely cutting off all moisture that might have reached the roots of the trees by capillary attraction.

Fig. 12 shows two trees from which we can draw several lessons.

The tree on the reader's left has a growth of a little more than three feet from the bud and would be classed as 4-5 foot tree under the system of using mere height as a basis.

The tree on the right would be classed an 8-9 foot tree, using the same basis.

We think the tree on the left is worth more than the other one because of its general development. (Read what we have to say along this line under the heading, OUR PRICES.)

The tree on the reader's left has a medium tap root, about 4 feet.

The tree on the right has a rather extreme tap root, more than 5 feet.

It will be noted that we dug completely under both trees, getting the whole tap roots.

Fig. 13 shows the same two trees after pruning, both root and branch, ready for packing and shipping, and also for transplanting when they reach the customer.

Either of these trees could be set in a post hole a foot in diameter; and we think it better to set them that way rather than to cut the tap roots, leaving the latter roots long, and setting them in a larger but shallower hole.

We are of the opinion that experience will lead all pecan growers to specify in their order that all trees shipped them must have fine long tap roots.

Fig. 14 shows one of our ideal Western pecan trees 7-8 feet tall, and otherwise developed in proportion to height.

Note that the entire tap root has been dug.

We have thousands of trees just like this one.

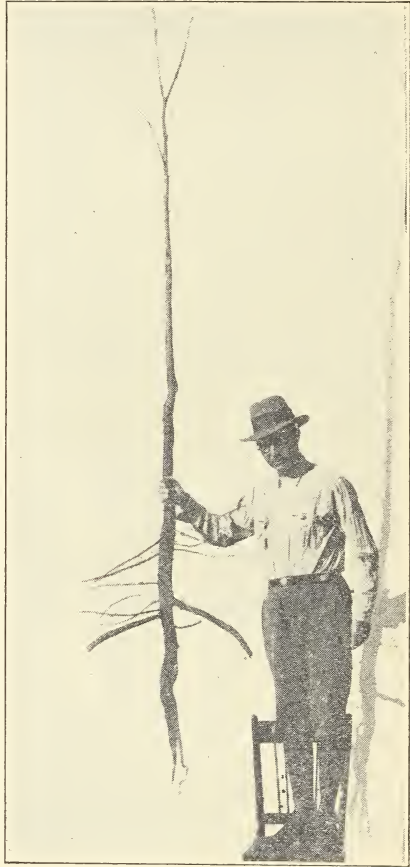


FIGURE 14

## HOW TO SET OUT PECAN TREES

The process of setting out pecan trees heretofore employed is as follows: Holes 2 to 2 1-2 feet wide, 4 to 4 1-2 feet long and 3 feet deep. If greater depth than three feet is required to accommodate the tap-root, add the necessary depth by use of a post hole digger in the

middle of the large hole. Take the trees to the field in the original package, taking out only one at a time as needed, and keeping the others well covered so the roots will not dry out.

Let one man get in the hole with the tree while another shovels in dirt around it, using only good top-soil. The man in the hole should keep the lateral roots straightened out in their natural positions, and should keep the dirt well packed in around the roots. Continue until all roots are well covered and the hole is nearly full of dirt. Pour in two or three buckets of water and, after the water has all been taken up, finish filling the hole with dry dirt.

It is usually considered better to set trees an inch or two deeper than they stood in the nursery row.

### NEW WAY

WE RECOMMEND the setting of whole tap-rooted trees with short-cut lateral roots in post holes amply deep to accommodate the whole root, putting the dirt back as nearly as possible just like it came out, if it is good dirt, not too dry and cloddy, tamping it in hard all the way from top to bottom. This will not only help the tree to live, but will also establish it at once in the kind of soil it must live in during the remainder of its life instead of giving it a more pleasing start, possibly, while it overfills the loose dirt with hair roots and then suffers because the roots have not entered the harder dirt around.

Fertilization the first year should be made by the application of a half-bushel or more of well-rotted stable manure placed in a shallow circular trench around the crown of the tree, but not in contact with the tree or any of its roots. The inside edge of this circular trench should be about a foot from the tree and the trench should be sufficiently deep and wide to accommodate this amount of manure well mixed with earth and still permit its covering with two or three inches of soil.

The fertility from this manure will leach down around the roots of the tree and will be sufficient for its needs the first year.

Unless we are instructed to the contrary, we send out all trees trimmed, both root and branch, ready for transplanting. Most people prefer to take advantage of our knowledge of trimming and to receive trees ready for transplanting.

Trimmed trees can be packed in smaller packages than untrimmed ones, transportation charges will be less, and there will also be less danger of injury in transit.

### YOUR CHOICE OF WAYS

If you do not like our way of digging and setting pecan trees, we will dig them any way you want them dug—whole tap-root or cut tap-root—long lateral roots or short ones. You can then set them out in any way you like.

As it costs more to dig a tap-root whole than it does to cut it, we will even allow you a reduction in price of trees if you want them with tap-roots cut.

### TIME FOR SETTING TREES

The season for setting out trees extends from the first of December to the last of February. Any time between these dates is good, but we have a preference for the early settings. In the first place, the customer gets a bigger range of choice at the nursery by ordering early, and then too, the dirt has time to settle around the roots of the transplanted tree before it starts to grow in the spring.

We do not spray our trees with chemicals to kill the leaves so as to be first on the market.

Every year we find the market flooded with pecan trees before ours are ready. Many of these trees come from as far East as Florida, and nearly all of them come from far southern locations where cold weather sets in much later than it does with us. We know, therefore, that these trees must have had their leaves killed by spraying, which is a devitalizing practice.



## NUMBER OF TREES TO SET TO THE ACRE

There is a strong tendency in the case of beginners to set trees too close together, some even advocating 30 feet apart each way, or 48 trees to each acre of ground.

There is an even stronger tendency among experienced growers to set them farther and farther apart, many advocating 100 feet apart each way in rich valley land.

We have never seen any one who set trees closer than 60 feet apart in orchard formation who was not sorry of it within a very few years after.

In sandy uplands where the trees will not grow so large, 60 feet each way will do, but the roots of trees this distance apart will meet in ten years or less, and there must always be plenty of space between the tops to admit plenty of sunlight and to allow free air movement to prevent fungous diseases.

In rich bottom lands the trees should be not less than 75 feet apart, and 90 feet would be better.

In case of trees around the home, in the yard, where there is no competition on the sides and where they can be carefully cultivated and watered, they may be set closer together.

Obviously, it would be to our interest to advise closer setting in order to sell more trees, but we are offering the above advice in the interest of the grower.

We recommend the "square" system, which is almost universally used in the arrangement of an orchard. Following are the approximate number of trees per acre under the square system:

60 feet apart,	12 trees per acre.
70 feet apart,	9 trees per acre.
80 feet apart,	7 trees per acre.
90 feet apart,	5 trees per acre.
100 feet apart,	4 trees per acre.

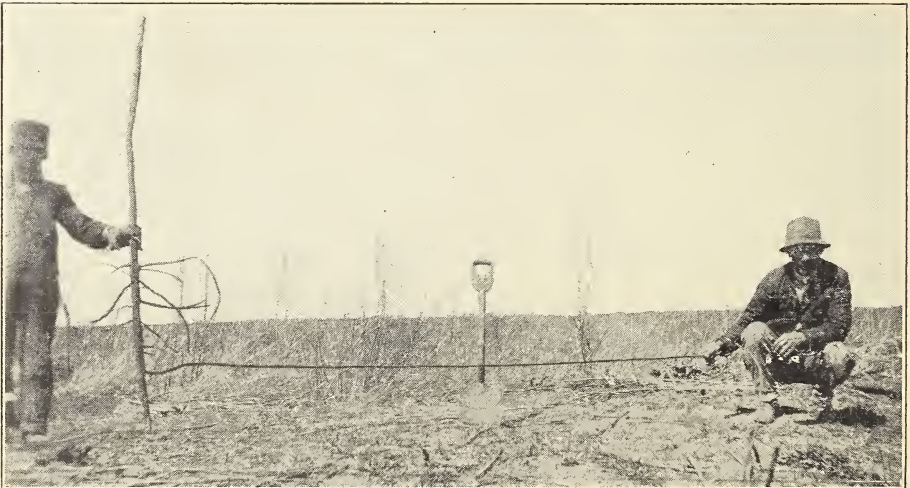


FIG. 15.—This lateral root was cut at 12 ft. from the main tap root. It was nearly as large at the point of cutting as at the place of starting.

This illustration shows why it is unwise to set too many trees to the acre. It also shows that fertilizer should be applied over a large area around the tree.



FIG. 16 shows the staminate (male) bloom of the pecan, which is in the form of catkins. Each catkin is composed of hundreds of little pods like English peas, each one of which pops open and sheds small grains of yellow dust, called pollen.

Not all varieties shed their pollen at the same time; and it is thought best to extend the period of shedding by having more than one variety.

FIG. 17 (enlarged) shows the pistillate (female) bloom of the pecan with the form of a little nut just below.

These pistillate blooms were in a highly receptive state when this picture was taken.

Each bloom that receives a grain of pollen at this time will set a nut. Each one that fails to receive a grain will fail to set a nut.



## NUMBER OF VARIETIES TO USE IN ORCHARD

The beginner is inclined to set too many varieties. We have recently visited a number of older groves that contain the entire list described in obtainable catalogues, and always the owner was sorry that his trees were not all of some four to six kinds—if he could only have known what ones to choose when he bought them.

At this time there is less excuse for using so many kinds, for there is more information about varieties.

But while it is not wise to use too many kinds, we think it is best to use as many as three or four, at least, in an orchard of any size in order to secure more perfect pollination. The varietal rows should be arranged east and west across the direction of prevailing winds.

Our advice is to set the bulk of your orchard to standard varieties adapted to the location where they are to grow—eastern varieties in the east and western varieties in the west—using a limited portion of your land for promising new kinds.

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These blooms were in a highly receptive state when this picture was taken.

Each bloom that received a grain of pollen at this time will set a nut. Each one that fails to receive a grain will fail to set a nut.

Not all varieties have receptive blooms at the same time.

## WHERE TO BUY TREES

The answer to this problem depends upon where you live. If you live in the great native pecan belt where the atmosphere is dry, consider well the climate of Florida, Georgia and the other Gulf states before buying there.

If you live in East Texas or any place east of there, it will be all right to buy trees in East Texas or any place east of there.

There are two reasons for these statements; namely, the constitutional adaptation of trees to environment, and adaptation of varietal characteristics to environment; and the latter is by far the more important, as it has a bearing not only on the vigor of the tree, but also upon its bearing habit, and other points that go to make its value. To illustrate: As between a Stuart tree grown in Georgia from a seed nut that was also raised there, and another Stuart tree grown here from a seed nut that was raised in the west, we would have some preference for the latter.

As between a Stuart tree grown in Georgia from a seed nut that was also raised there, and a Clark tree grown here from a seed nut that was raised in the west, we would have a most decided preference—so decided, in fact, that we could not be induced to use the former tree.

We would not even be willing to use a Stuart tree grown here on stock from western seed, because the Stuart top would carry the varietal characteristics with it, including lack of adaptability to environment.

The eastern nurseries might solve the root problem by the use of western seed; the other problem is not susceptible of solution.

So, if you should not buy eastern grown trees, you should not, with still more reason, buy eastern varieties of trees.

We mean no disparagement of any other nursery. We think that any nurseryman in Florida would advise against the setting of West Texas varieties in that state, except in a limited way.

He certainly would be right in doing so.

Some nurseries in the far South, where cool weather followed by frost comes late, have been in the habit of applying poisonous sprays to their trees in order to defoliate them and get them on the market early.

Personally we would not want trees that had been treated that way.



## OUR PECAN SEED

Manifold effect of stock on scion is a mooted question. No one, however, questions the effect of stock on the vigor and growth of the scion.

It is our opinion that other effects are modifications growing directly out of this major effect.

Trees that have grown for ages, generation to generation, in a dry climate, have modified themselves to fit conditions there. They have more root and less top, for instance.

This modification did not come about in a day; neither is it lost in a generation.

We have found that pecans from high dry parts of Mexico and West Texas produce wonderfully tap-rooted trees, with a fair number of lateral roots coming out all along them from top to bottom, so as to draw moisture from deeper soil and a greater volume of soil than they could do if they were massed together near the surface, where they would not only fail to draw moisture from so great a depth, but would actually compete with each other for what moisture might be near the surface.

This modification can but favorably affect the vigor of the trees in the native pecan belt of Texas and Oklahoma, where a constant supply of moisture is the most important consideration, and, through vigor, also affect size of nuts, heaviness of yield, percentage of meat, and richness and flavor of kernel.

We get all of our pecan seed from either Mexico or West Texas.

Some nurseries make a point of getting their seed pecans from swampy territory because trees grown from seed nuts gathered from trees that have lived from generation to generation under such conditions have a tendency to produce an abundance of lateral roots near the surface of the ground.

In our opinion trees that have developed such roots at the expense of an ample tap-root are not best for any section that is subject to dry weather.

## CULTIVATION, INTERCROPPING, FERTILIZING

Probably ninety per cent of the pecan orchards we have seen have been neglected to some extent—most of them sadly neglected. Perhaps more pecan trees die from neglect than from all other causes combined.

When you set out pecan trees, make up your mind at the time to give



FIG. 18.—Illustration shows intercropping a pecan orchard with cotton, one of the most desirable plants for use in a young pecan orchard.

them all the attention they need—it will pay you. That pecan trees produce a few nuts under conditions of neglect is no proof that they will not respond to cultivation and fertilization. In fact there is no other tree that responds more readily than the pecan.

All the pecan orchards that have grown to be profitable are those that have been well cultivated and have received sufficient fertilizer to meet the deficiencies of the soil.

It is all right—even desirable—to grow crops in the space between the pecan rows, provided the crops are not rank growing ones, like corn, or thick growing hay crops, like sorghum and Sudan, any one of which would rob the young trees of moisture.

A space 4 1-2 feet wide should be left on each side of the young trees, which space should be kept well cultivated at all times. This space should be widened from year to year until the whole area is finally appropriated to the trees.

Not much will be lost to the crop during the early life of the trees under this arrangement, as the crop rows next to the open space of the tree rows will produce much more than they would have done had the space not been there.

Directions for fertilizing pecan trees the first year will be found under the heading, How to Set Out Pecan Trees. The second year an application of barn yard manure to most soils would be of great benefit, and on soils deficient in phosphorus, the addition of phosphoric acid would be profitable. Each succeeding year the amount of fertilizer should be increased, being applied in ever widening circles.

The growing of money crops between the trees should not be pursued to the exclusion of green manure crops, preferably suitable legumes, which are necessary to maintain a high humus content in the soil.

## PEACHES

We have beyond doubt the best collection of peaches ever assembled upon this earth.

The collection is the result of twenty years of effort. Most of the varieties in the collection are our own, and are not grown by anyone else.

Their ripening dates extend across the season, even up to the middle of November.

Brief descriptions of some of our new kinds follow:

**BRYANT EARLY. F. June 1 to 10.** (Our own introduction.) This is the first real peach to ripen that we know of. It is really of most excellent quality for any season.

**CAMPBELL. C. JULY 20.** (Our own introduction.) A peach of large size and magnificent appearance

**ELBERTA SPECIAL. F. Latter part of July.** (Our own introduction.) We have made a search for the best Elberta tree, and think we have found it.

**MARGARET EVANS. F. Immediately following Elberta.** (Our own introduction.) Flesh yellow, juicy, sweet, by far surpassing Elberta.

**CHARLOTTE EVANS. F. Week after Elberta.** (Our own introduction.) This is probably the most beautiful peach that has ever been originated. Unsurpassed for shipping. We regard the Charlotte Evans as one of the most valuable peaches ever introduced.

**SHORT. F. August 10.** (Our own introduction.) Fruit surpasses anything we have ever seen in uniformity of size, shape and color. Flesh tender, juicy, sweet. Very valuable

**ELCLING. C. Mid-August.** (Of our own introduction.) Of Elberta type, though a cling. No orchard or yard complete without this variety.

**SAVAGE QUEEN. F. September 20.** (Our own introduction.) Of Elberta type, and the date of its ripening makes it a valuable sort.

**WINTERCHEEK. C. November 15.** (Our own introduction.) Probably the latest of all peaches to ripen. Flavor fine. Blooms late and seems to escape frost. Failure to set a crop has not occurred during 15 years. We regard this variety as one of the most valuable additions to horticulture.

**NOTE: COMPLETE DESCRIPTIONS OF THESE VARIETIES WILL BE FURNISHED UPON REQUEST.**

We grow only a limited number of these peach trees, and all of them are already sold. In fact, we could have sold hundreds of times more than we have of some of them. We can offer these for fall delivery, 1927.

We grow only a few varieties of ordinary kinds, and those only for the purpose of filling in some ripening dates that ours do not cover.

## PLUMS

We grow some thirty leading varieties of plums. (We offer no plums for delivery until fall, 1927.)

## GRAPES

We have tested out in our experimental plots more than fifty varieties of grapes, and are prepared to furnish advice as to what varieties do best under various conditions.

One of our new ones, the **Purplewine**, is destined, we think, to play as important a part in the South and West as the Concord has played in the North and East.

It is the equal of the Concord in all respects, and is superior to it in many.

(We offer several thousand vines for sale, though no Purplewine until fall of 1927.)

## JUJUBES

There should be two or three trees of this important Chinese fruit in every yard.

The trees are not only beautiful, they bear regularly and heavily.

The fruit is not only good to eat fresh, it makes delightful preserves, sweet pickles, and confections.

We have never been able to grow enough trees to fill all orders, but hope to do so next season. Orders booked for delivery beginning in the fall, 1927.

We grow rare trees from many parts of the earth in our experimental plots. Some of them do wonderfully well, and others do poorly.

We will make announcement from time to time of those that have proved themselves to be of value.



